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Studying the Relationship between Reciprocal Services in the Supply Chain based on the Gap Model

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Abstract

The purpose of this study is to evaluate expectations and performance of logistic criteria in both supplier and company sections. For this purpose, South Zagros Oil and Gas Exploitation Company and its main suppliers have been selected as statistical population. A sample of 25 couple members were selected from this population and then key gaps were measured through paired comparison test in both direct and inverse manners through a questionnaire. In order to measure the relationship between inverse and direct gap, Pearson correlation coefficient was used. The result of this study revealed that there is no significant relationship between direct and revere gaps.

Keywords: Services Quality, Supply Chain, Gap Analysis.

Introduction

It is indicated in the marketing literature that qualified service is a main effective factor in the organizations' success and competitive advantage. Indeed, the concepts of services quality and customer satisfaction are two critical tools in every marketing effort. There is a significant relationship between services quality and improvement of supply chain performance. The reason is that satisfaction of supply chain members beside the reinforcement and improvement of participations lead to better results for organizations and businesses. So it can be said that services quality is an important tool in the participations improvement. There are several effective factors on the services quality such as customer services which is the communication between consumer and services employees and their behavior. The last factor in influenced by perceived quality. In some cases, there is a difference between expected and perceived services. Services process depends on the needs and acquiring information from consumers. On the other hand, the consumers' prioritizations and expectations may be changed during time(Gupta& Singh, 2012). In order to achieve higher levels of services quality, directors of purchasing should recognize and understand the important services aspects from customers and consumers perspective. The reason is that it is the customer that determines services quality not company (Jeng& Sky, 2012).

Statement of the problem

With respect to today's variable environment and increase in the environmental and uncontrollable factors and threats in the organizational environments, the organizations cannot move toward their goals smoothly. In such conditions, the organizations and businesses needs to be innovative and creative in order to secure their survive and presence in the marketplace actively (Shen & Xie, 2000). It is should be remembered that suppliers' quality and selection of appropriate suppliers results in the long-term competitive advantages for them(Lu, 2011). Supply chain is considered as an important section of gross national production (GNP) in every country. With regard to this fact that logistic efforts influence inflation rate, productivity rate, energy costs, profitability, and other economic characteristics, organizations should use appropriate tools and methods for recognizing customers' needs and then prioritize them based on their importance. In addition, Oil and Gas Company has a strategic role in every country. Therefore, it is necessary to consider services quality in the process of supplier selection. On the other hand,

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services quality has several benefits such as competitive advantage, decrease in costs, profitability, increase in the market share, and increase in the customer satisfaction.

Supply chain

Supply chain refers to a set of two or more organizations which are autonomous from each other and are related to each other through information and financial flows. These organizations may be companies that produce parts, components, or final products and even include services organizations produce and distribute services(Demeter &krisztina, 2006). At a comprehensive level, supply chain may refer to the inter-organizational supply chain. On the other hand, supply chain may refer to an intra-organizational supply chain at the smaller level. In the intra-organizational supply chain, relations and coordination of different functional sections such as marketing, production, sale, and logistics are necessary (Stadtler&Kilger, 2005).

Gap analysis model

The conceptual model of services quality has been introduced in 1985 for the first time. Indeed, it starts by presentation of a conceptual model of quality gap by Parasoraman *et al.* They referred to services quality as a gap and distance between customers' expectations from services and their perceptions interaction from received services (Zeithaml, &Parasuraman, 1988). Although many authors and researchers studied services concept, but there is not any consistency among them about concept of services quality. The reason is that every author has concentrated on an especial part of services. Based on the most famous definitions, services quality is the customers' perception of utility of presented services [Carman, 1990). There are seven main gaps in the gap model. These include (Shahin, 2003):

1. Gap between customers' expectations and management perception
2. Gap between management perceptions and services characteristics
3. Gap between services characteristics and presented services
4. Gap between presented services and external communications
5. Difference between customers' expectations and their perception from presented services (quality gap)
6. Difference between customers' expectations and employees' perceptions
7. Difference between employees' perceptions and management perceptions

Materials and Methods

Based on the gap analysis model, gap refers to a difference between customers' expected services and received services. In the present study, the logistic performance criteria have been collected based on the review of literature and organizations' and suppliers' expected criteria. The conceptual model of the study has been showed in figure 1.

Main hypothesis (F): there is a gap between company's expected logistic performance and its received logistic performance (direct gap).

In order to test the main hypothesis of this study, the following five secondary hypotheses have been developed.

1. There is a gap between company's expected logistic performance and its received logistic performance from tangibles perspective.
2. There is a gap between company's expected logistic performance and its received logistic performance from reliability perspective.
3. There is a gap between company's expected logistic performance and its received logistic performance from accountability perspective.
4. There is a gap between company's expected logistic performance and its received logistic performance from services insurance perspective.
5. There is a gap between company's expected logistic performance and its received logistic performance from empathy perspective.

The reverse hypotheses of the study have been presented in the following section.

Main hypotheses (R): there is a gap between suppliers' expected logistic performance and their received logistic performance (direct gap).

In order to test this hypothesis, the following secondary hypotheses have been developed.

1. There is a gap between suppliers' expected logistic performance and their received logistic performance from tangibles perspective.
2. There is a gap between suppliers' expected logistic performance and their received logistic performance from reliability perspective.
3. There is a gap between suppliers' expected logistic performance and their received logistic performance from accountability perspective.
4. There is a gap between suppliers' expected logistic performance and their received logistic performance from services insurance perspective.
5. There is a gap between suppliers' expected logistic performance and their received logistic performance from empathy perspective.

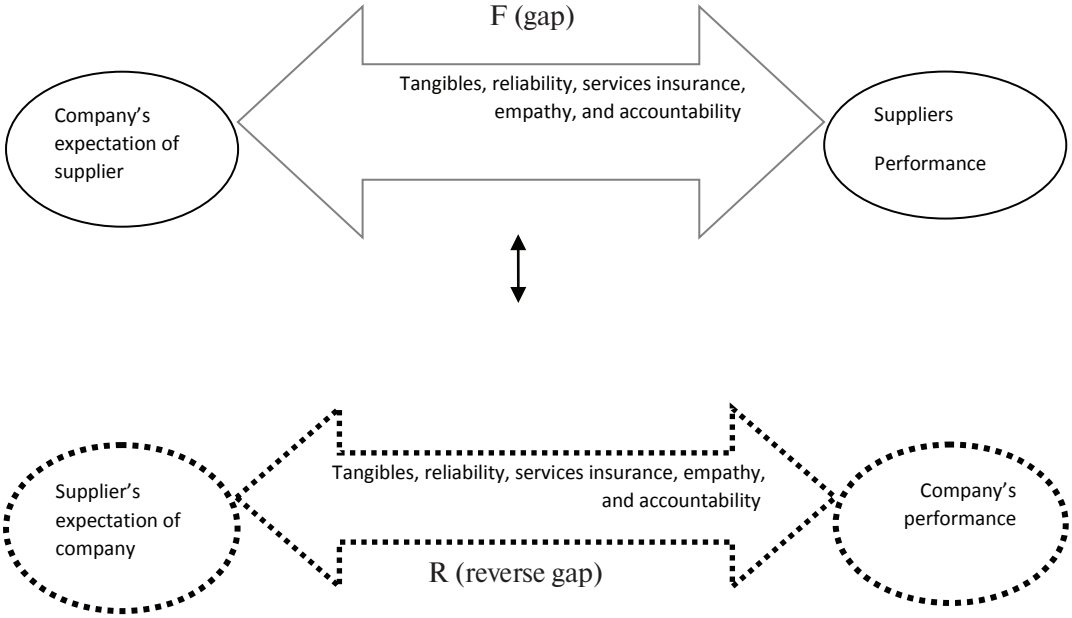

Figure 1: the conceptual model of study

In order to collect the research data, two questionnaires have been used. These have been used for analyzing logistics performance quality. The first is the questionnaire of company's expectations from suppliers and their performances (direct gap). For this purpose, 22 criteria have been selected based on the experts' viewpoints. The second questionnaire refers to the suppliers' expectations and the company's performance (reverse gap). For this purpose, 15 criteria have been selected. Both questionnaires have been developed in the Likert five-point scale in which 1 refers to very low and 5 refers to very high. On the other hand, ideal conditions gap refer to expectations and performance refers to the existing conditions. Validity of the questionnaire has been examined through face validity. For this purpose, the questionnaire has been reviewed and modified by academic professors and professional experts. On the other hand, Cronbachs' Alpha Coefficient has been used for examining reliability of the questionnaire. The coefficient was 0.89 for direct gap questionnaire and 0.83 for reverse gap questionnaire. The coefficients ensure higher reliability of the questionnaire. The criteria of logistics performance have been presented in table 1 and criteria of reverse logistics performance have been indicated in table 2.

Table 1: The criteria of logistics performance in the direct section

Dimensions	Criteria
Tangibles	Convenience and appropriate ordering methods, good geographical conditions, appropriate place, buying process consistency, work relations experience, communicational systems
Reliability	Quality, company's financial conditions, sound orders, packaging ability
Accountability	Information accessibility, providing timely information, sellers' behavior, responding demand diversity and new technologies, post-purchase services
Services insurance	Insurance, skills, educational helps for consumers, timely delivery, defection-less delivery
Empathy	Payment methods, the use of several languages and monasteries, emergency orders

Table 2: The criteria of logistics performance in the reverse section

Dimensions	Criteria
Tangibles	Communicational systems, work relations experiences, geographical position
Reliability	Sound, regular, and sound documents, sound investigation
Accountability	Employees' behaviors, accountability, efforts speed
Services insurance	Insurance, act to commitment timely, time of committed actions
Empathy	Acceptable cost, communications, payment methods, the use of several languages and monetary systems

Results

The research data has been analyzed and tested through statistical parametric methods such as paired-comparison methods in the SPSS. The results of direct gap main and secondary hypotheses .The results of logistics performance criteria measurement in the direct gap section have been presented in table 3.

Table 3: The results of logistics performance criteria measurement in the direct gap section

H number	Hypotheses	Sig	Performance average	Expectations average	Hypotheses results
1	H0: μ1= μ2 There is not any gap between company's expected logistic performance and its received logistic performance from tangibles perspective. H1: μ1≠ μ2 There is a gap between company's expected logistic performance and its received logistic performance from tangibles perspective.	0.000	3.52	4.26	It can be sais with confidence 0.95 that there is not any significant difference in the tangibles dimension in the relationship between expectations and performance. Based on the results of this hypothesis, the hypothesis is supported.
2	H0: μ1≠ μ2 There is not any gap between company's expected logistic performance and its received logistic performance from reliability perspective. H1: μ1= μ2 There is a gap between company's expected logistic performance and its received logistic performance from reliability perspective.	0.32	3.59	3.6	It can be said with confidence 0.95 it can be said that there is a significant difference between expectations and performance in terms of reliability dimension. Therefore, the second hypothesis is not supported.
	H0: μ1≠ μ2 There is not any gap between company's expected logistic performance and its received logistic performance from accountability perspective. H1: μ1= μ2 There is a gap between company's expected logistic performance and its received logistic performance from accountability perspective.	0.000	3.49	4.32	It can be said with confidence 0.95 that there is a significant difference between expectations and performance in terms of accountability dimension. Therefore, the company's expectations are more than suppliers' performance. It can be said that the hypothesis id supported.
4	H0: μ1= μ2 There is not a significant gap between suppliers' expected logistic performance and their received logistic performance from services insurance perspective. H1: μ1≠ μ2 There is a significant gap between suppliers' expected logistic performance and their received logistic performance from services insurance perspective.	0.00	3.47	4.27	It can be said with confidence 0.95 that there is a significant difference between expectations and performance. In other words, company's expectations are more than suppliers' performance. Therefore, the hypothesis is supported.
	H0: μ1= μ2 There is not any significant gap between company's expected logistic performance and its received logistic performance from empathy perspective. H1: μ1= μ2 There is a significant gap between company's expected logistic performance and its received logistic performance from empathy perspective.	0.00	3.36	4.13	It can be said with confidence 0.95 that there is a significant difference between expectations and performance. In other words, company's expectations are more than suppliers' performance. Therefore, the hypothesis is supported.
F	H0: μ1= μ2 There is a gap between company's expected logistic performance and its received logistic performance. H1: μ1= μ2 There is not any significant gap between company's expected logistic performance and its received logistic performance.	0.00	3.88	4.11	It can be said with confidence 0.95 that there is a significant difference between expectations and performance. In other words, company's expectations are more than suppliers' performance. Therefore, the hypothesis is supported.

The results of reverse gap main and secondary hypotheses

The results of logistics performance criteria measurement in the reverse gap section have been presented in table 4.

As indicated in the table 5, there is not any significant relationship between gaps. This means that if the company's expectations are not satisfied in every dimension, then the suppliers' expectations will not be satisfied.

Table 4: The results of logistics performance criteria measurement in the reverse gap section

H number	Hypotheses	Sig	Performance average	Expectations average	Hypotheses results
1	H0: μ1= μ2 There is not any gap between company's expected logistic performance and its received logistic performance from tangibles perspective. H1: μ1≠ μ2 There is a gap between company's expected logistic performance and its received logistic performance from tangibles perspective.	0.011	3.57	3.92	It can be sais with confidence 0.95 that there is not any significant difference in the tangibles dimension in the relationship between expectations and performance. Based on the results of this hypothesis, the hypothesis is supported.
2	H0: μ1≠ μ2 There is not any gap between company's expected logistic performance and its received logistic performance from reliability perspective. H1: μ1= μ2 There is a gap between company's expected logistic performance and its received logistic performance from reliability perspective.	0.115	3.94	4.28	It can be said with confidence 0.95 it can be said that there is a significant difference between expectations and performance in terms of reliability dimension. Therefore, the second hypothesis is not supported.
	H0: μ1≠ μ2 There is not any gap between company's expected logistic performance and its received logistic performance from accountability perspective. H1: μ1= μ2 There is a gap between company's expected logistic performance and its received logistic performance from accountability perspective.	0.071	4.04	4.37	It can be said with confidence 0.95 that there is not any significant difference between expectations and performance in terms of accountability dimension. Therefore, the company's expectations are more than suppliers' performance. It can be said that the hypothesis is not supported.
4	H0: μ1= μ2 There is not a significant gap between suppliers' expected logistic performance and their received logistic performance from services insurance perspective. H1: μ1≠ μ2 There is a significant gap between suppliers' expected logistic performance and their received logistic performance from services insurance perspective.	0.002	3.66	4.31	It can be said with confidence 0.95 that there is a significant difference between expectations and performance. In other words, company's expectations are more than suppliers' performance. Therefore, the hypothesis is supported.
	H0: μ1= μ2 There is not any significant gap between company's expected logistic performance and its received logistic performance from empathy perspective. H1: μ1= μ2 There is a significant gap between company's expected logistic performance and its received logistic performance from empathy perspective.	0.025	3.77	4.16	It can be said with confidence 0.95 that there is a significant difference between expectations and performance. In other words, company's expectations are more than suppliers' performance. Therefore, the hypothesis is supported.
R	H0: μ1= μ2 There is a gap between company's expected logistic performance and its received logistic performance. H1: μ1= μ2 There is not any significant gap between company's expected logistic performance and its received logistic performance.	0.025	3.77	4.16	It can be said with confidence 0.95 that there is a significant difference between expectations and performance. In other words, company's expectations are more than suppliers' performance. Therefore, the hypothesis is supported.

The results of the relationship between direct and reverse gap

Is there any significant relationship between direct and reverse gap. For example, if the company's expectations are not satisfied, whether its suppliers' expectations will be satisfied? The results of Pearson correlation coefficient have been presented in table 5.

Table 5: The results of the relationship between direct and reverse gap

Dimensions	Correlation coefficient	Sig
Direct and reverse tangibles gap	-1.22	0.59
Direct and reverse reliability gap	-0.114	0.22
Direct and reverse accountability gap	-2.10	0.314
Direct and reverse services insurance gap	-1.76	0.434
Direct and reverse empathy gap	0.257	0.273

Discussion

Services quality is considered as a key factor in achieving sustainable competitive advantage. With regard to the role of suppliers in the supply chain, it is necessary to evaluate quality of offered services by suppliers. On the other hand, it is should be attended that the position of supply chain success depends on the performance of its components and their relation with each other. So, it is necessary that organizations' services be evaluated. Kuei and mado (2008) during a field study in Taiwan to investigate the influencing variables to increase the efficiency of the supply chain in an environment focused on quality basis. They affect three variables: customer focus and quality associated with the supplying of information systems are diagnosed. Wolf, (2011) fundamental factors of supply chain integration in the food industry plants in Germany was evaluated. Factors that had positive impact were: organizational structure, leadership, cooperation with governmental and non- governmental organizations, interacting with shareholders, suppliers are positioning resources and relationship management. Gupta and Singh (2012) Service quality in supply chain based on three categories of models based on information technology, gap analysis and synthesis of the two models that were investigated and concluded that the quality of service for a continuous improvement of the supply chain is critical. This is why the present study was aimed to evaluate quality of suppliers and organization' services. The results of this study revealed that there is a significant gap between the company's expectations and suppliers' performance in terms of direct gap. This means that the company's expectations are more than suppliers' performance. Another part of the results showed that there is a significant gap between the company's expectations and suppliers' performance in terms of reverse gap. This means that the company's expectations are more than suppliers' performance. Also the results of the study in terms of the relationship between direct and reverse gap revealed that there is not any significant relationship between gaps. This means that if the company's expectations are not satisfied in a dimension, the suppliers' expectations cannot be satisfied in that dimension. Based on the results of this study in terms of company's needs and expectations from suppliers, it is suggested that they examine the suppliers' capabilities in terms of suggested orders before ordering and transaction process. Also it is suggested that future studies should concentrate on the other dimensions and gaps of SERQUAL model.

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